SCOPUS

UNUSUAL BREEDING RECORDS MADE FROM A HELICOPTER IN TANZANIA

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Helicopters have been used for surveying for Red-billed Quelea *Quelea quelea* breeding colonies in Tanzania since 1978. The area covered by the surveys has included a broad band of country from Mbeya in the south, north to Lake Jipe, west as far as Lake Natron and Shinyanga and east as far as Kilosa. Surveys were most often conducted at about 50 m above the ground at a speed of about 190 km/h, but the helicopter could be slowed down to a hover to make precise observations. The quelea surveys provided an opportunity to make incidental observations on the contents of large nests in the tops of trees or in other difficult of access breeding sites. The more unusual of these observations are recorded below.

BREEDING RECORDS

Purple Heron *Ardea purpurea*. At least five nests were seen on 17 May 1981 in dense reed beds in the swamps 10-15 km NE of Kilosa (6.50S, 36.59E). The clutches of the turquoise-blue eggs were one (two nests), two (1) and three (2) compared to those given by Mackworth-Praed & Grant (1957) of 2-5, suggesting that breeding had only recently started, towards the end of the rains.

Rufous-bellied Heron *Ardeola rufiventris*. Singles of this species are regularly encountered around Mbarali State Rice Farm (8.35S, 38.40E) in southern Tanzania. On 22 April 1981 a flock of about 100 birds was disturbed from a dense reed bed about 40 km N of the farm in the swamps of the Usangu Flats (8.30S, 34.15E). Because of the very dense vegetation, it was impossible to detect any nests, but the presence of a breeding colony seemed the most logical explanation of such an unusual congregation of this species. Other similar species breeding in the vicinity at that time included Cattle Egret *Bubulcus ibis*, Black-headed Heron *Ardea melanocephala* and Sacred Ibis *Threskiornis aethiopica*. According to Britton (1980) only one other breeding record for *Ardeola rufiventris* exists for East Africa - a colony of eight pairs in Busi Swamp, Uganda, but colonies of up to 30 nests are known in southern Africa (McLachlan & Liversidge 1970).

On 29 April 1983, 5 km S of Mbarali State Rice Farm, about 30 Rufous-bellied Herons were seen sitting on the outside of two small (0.25 ha) areas of reeds.

When the helicopter approached, a further 30 birds burst out of the reeds. We hovered over the area searching for nests and saw one bird floundering on what appeared to be a nest, half-way down into the reeds, but we could not see whether the bird concerned was a well grown chick or an adult protecting its nest contents. When we left the area, we noticed that the birds returned very quickly to the patches of reeds. These observations would seem to be further evidence of communal breeding of this heron in the area.

Saddle-billed Stork *Ephippiorhynchus senegalensis*. Brown & Britton (1980) give only 13 records for the whole of East Africa, of which five are from Tanzania. The six records I have are all of nests in the tops of tall trees in May. Four were along the Manonga River, 50 km S of Shinyanga (at 3.50S, 33.20E) (clutches C2 3 May 1978, C3 3 May 1979, C3 23 May 1981 and C4 1 May 1982) and two on the Usangu Flats of the Ruaha valley (2 young plus a possible egg on 10 May 1978 and 2 young on 15 May 1979). The clutch of four seems one more than usual compared to southern Africa (McLachlan & Liversidge 1970) and the presence of chicks in May in the south suggests that breeding takes place at least one month earlier there than in Shinyanga.

Greater Flamingo *Phoenicopterus ruber*. A breeding colony of about 3000-5000 pairs was observed on a mudbank in the middle of Lake Eyasi (3.40S, 35.05E) on 28 April 1982. Almost all the nest mounds contained a single egg, but three small chicks were also seen. It was not possible to inspect any eggs so it is uncertain if the chicks were early hatchers or if the colony was relatively asynchronous. No Marabous *Leptoptilos crumeniferus* or mammalian predators were seen in the area, which was at least 5 km from the nearest, western, shore. All around the colony were large numbers of Lesser Flamingos *Phoeniconaias minor*, but no sign of breeding was seen. The breeding of the Greater Flamingos might have been related to the exceptionally good 'short' rains reported from the Oldeani region in December/January, the run-off of which goes into the lake. A similar flight over the lake in 1981 did not reveal any breeding, nor were many flamingos of either species seen. A flight over Lake Natron in June 1982 revealed very many fewer flamingos than had been seen in April in Lake Eyasi, and no sign of breeding or even of old nest mounds.

Lake Eyasi is a new breeding locality for the Greater Flamingo. Eyasi has been checked by air before (Brown 1973) but without success, so it is not clear if it is a regular breeding site or an exceptional one. On the other hand, the ability of the species to nest in almost any month (nine out of 12 at Lake Elmenteita, Kenya - Brown 1975) means that aerial surveys would have to be carried out every three months to be sure of detecting breeding.

In Brown's (1975) speculations on the age to which Greater Flamingos would have to live to replace themselves (58 yr at the high predation rate seen at Elmenteita), he mentioned that this surmise would be exploded if new breeding grounds were discovered. It remains to be established whether Lake Eyasi contributes to that explosion by being proved to be a regular breeding site or not.

African White-backed Vulture *Gyps africanus*. This species was one of the commonest seen from the helicopter and small colonies of five or more nests were occasionally noted in patches of tall trees along river beds. The main difficulty was the disinclination of the sitting bird to get off the nest, even when being affected by the down-wash of the helicopter, which might have endangered the nest contents if we went too close.

Our surveys, starting in March, showed a fairly precise start to breeding in northern Tanzania in late May each year (all nests, one egg only: near Arusha 29 May 1982 (2), 30 May 1982 (2); south of Moshi: 6 June 1982 (4)). Prior to that, empty nests were seen or, later, vultures were seen standing beside

empty nests. Not until late May were birds seen sitting and the first egg noted. In the extreme south of the country, around the Usangu Flats, nests were seen on 16 May 1980 (one with one egg, two with tight-sitting birds), in central Tanzania nests were seen near Kondoa (4.54S, 35.47E) in early May 1981 (three with one egg, two nests with birds sitting tight) and on 20 May 1980 (one with one egg). There is therefore a slight indication that breeding may be about two or three weeks earlier, but not more, in the south than in the north. This would be expected if the breeding is matched to the rains in order to fledge chicks at the end of the dry season.

Rüppell's Vulture *Gyps rueppellii*. Only one definite breeding site was seen, on the cliffs in the side of a small crater about 20 km S of Arusha. On 6 June 1981 six birds were observed sitting and one of them revealed an egg. On 30 May 1982 a similar number of birds was present and one was seen with an egg. These breeding dates are different from those obtained by Houston (1976) in the Serengeti where peak laying is in December/January. The rainfall pattern given by Brown & Britton (1980) shows that there is only a difference of one month in the peak month, with Arusha being the later. The possibility that the eggs observed were addled on both occasions seems unlikely but further observations are needed for clarification.

Short-toed Snake Eagle *Circaetus gallicus*. A nest was found by helicopter on 1 May 1982 in the grassland dotted with acacia on the Manonga River, roughly due south of Shinyanga; the bird flew off as the helicopter got near. The nest was situated in a rather spindly gall acacia, possibly a whistling thorn *Acacia drepanolobium*, about 5-7 m high. It was a platform of thin sticks and contained a single white egg. This seems to be the first definite record for Tanzania within Brown & Britton's (1980) climatic zone C.

Tawny Eagle *Aquila rapax*. Four nests were seen, all with one egg and all on the flat tops of substantial acacia trees. One of the nests was along the Manonga River on 1 May 1982, one near Kiomboi (4.16S, 34.22E) on 3 May 1982, one west of Basotu (4.22S, 35.05E) on 4 May 1982 and one near the north end of Lake Balangida (4.20S, 35.20E) on the same day. Only two records have been reported previously from Region C in Tanzania (Brown & Britton 1980).

Wattled Crane *Grus carunculatus*. Two adults and one chick, which was big enough to half flap, half run along, when we approached, were seen in swampland SW of Iringa in southern Tanzania. The grass-swampland in which the birds were seen was not far from some open water which was bordered by a large clump of papyrus. The exact location of the site is not known but it was about 80 km from Iringa. From the air, apart from their size, the most striking features of the adults were their bright white necks and the grey colour of the upper surface of their wings, thereby clearly distinguishing them from Woolly-necked Storks *Ciconia episcopus*. Reference to Brown & Britton (1980) indicates that this is the first breeding record for East Africa. The nearest locality where it is reported to be common and is known to breed is probably western Zambia (Benson *et al*. 1971).

Crowned Crane *Balearica pavonina*. Five records can be added to those reported by Brown & Britton (1980). One was seen in the Wembere Swamp (4.30S, 34.00E) having two chicks not yet able to fly on 30 April 1978, one with one egg at Mbarali (8.35S, 38.40E) on 23 March 1982, another with one egg in a flattened part of a reed bed along the Great Ruaha River where it runs through the Usangu Flats (8.30S, 34.15E) on 25 March 1982, one with two eggs in a mine-pit at Mwadui (Williamson) Diamond Mine (3.33S, 33.36E) and one with one egg on the banks of the Manonga River 50 km S of Shinyanga. These few records suggest earlier breeding in the south than in central Tanzania.

Red-headed Quelea *Quelea erythrops*. Extensive surveys of the swamps east and northeast of Kilosa (6.50S, 36.59E) were made by helicopter. In the *Typha* reed-beds about 15 km E of Kilosa, near Msimba Farm, 11 colonies of densely-packed nests of Red-headed Quelea were seen from the air between 13 and 19 May 1981. The species identity was verified by entering the edge of the swamp on foot. These colonies covered in total at least 40 ha, and it is likely that about 1.5 million breeding adults were present. The only colony which was approached on foot had young chicks in the nest - determined by the buzz of the juvenile chirping - but no nests could be examined because of the swampy conditions. The birds were reported to be causing damage to cultivated rice.

This record appears to be the first breeding for East Africa (Brown & Britton 1980) and Britton (1980) refers to the species as a non-breeding visitor, especially in the coastal lowlands of Tanzania. These colonies are also quoted by Taylor (1983) from data supplied by J.S.S. Beesley on 22 April 1981.

The nearest other breeding record appears to be from the Kafue Flats in Zambia (Benson *et al*. 1971).

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